NOTES.

THE council of the British Association, acting under authority of the general committee, has made the following grants out of the gift of 10,000*l.* made to the association for scientific purposes by Sir J. K. Caird at the Dundee meeting of the association last year:—(1) 500*l.* to the committee on radio-telegraphic investigations; (2) an annual grant of 100*l.* to the committee on seismological investigations, which is carrying on the work of the late Prof. John Milne, F.R.S.; (3) an annual grant of 100*l.* to the committee appointed to select and assist investigators to carry on work at the zoological station at Naples; (4) 250*l.* towards the cost of the magnetic re-survey of the British Isles, which has been undertaken by the Royal Society and the British Association in collaboration.

FOR the Australian meeting of the British Association in August next year, under the presidency of Prof. W. Bateson, F.R.S., the following presidents of sections have been appointed:—A (Mathematics and Physics), Prof. F. T. Trouton, F.R.S.; B (Chemistry), Prof. W. J. Pope, F.R.S.; C (Geology), Sir T. H. Holland, K.C.I.E., F.R.S.; D (Zoology), Prof. A. Dendy, F.R.S.; E (Geography), Sir C. P. Lucas, K.C.M.G.; F (Economics), Prof. E. C. K. Gonner; G (Engineering), Prof. E. G. Coker: H (Anthropology), Sir Everard im Thurn, K.C.M.G.; I (Physiology), Prof. C. J. Martin, F.R.S.; K (Botany), Prof. F. O. Bower, F.R.S.; L (Educational Science), Prof. J. Perry, F.R.S.; M (Agriculture), Mr. A. D. Hall, F.R.S.

SIR PHILIP WATTS, K.C.B., F.R.S., has received the Order of the Rising Sun (Second Class) from the Emperor of Japan.

THE Royal Society announces that the studentship on the foundation of the late Prof. Tyndall for scientific research on subjects tending to improve the conditions to which miners are subject has been awarded for the ensuing year to Mr. J. I. Graham, of Bentley Colliery, Doncaster, for an investigation into the cause of spontaneous combustion of coal, with special reference to gob-fires.

AT the annual general meeting of the Faraday Society, held on November 26, the following officers and council were elected to serve for the year 1913–14:—*President,* Sir Robert Hadfield, F.R.S.; *Vice-Presidents,* Dr. G. T. Beilby, F.R.S., Prof. K. Birkeland, W. R. Bousfield, K.C., Prof. Bertram Hopkinson, F.R.S., Prof. A. K. Huntington, Dr. T. Martin Lowry, and Alexander Siemens; *Treasurer,* Dr. F. Mollwo Perkin; *Council,* R. Belfield, Dr. H. Borns, W. R. Cooper, Prof. F. G. Donnan, F.R.S., Emil Hatschek, Dr. R. S. Hutton, Prof. A. W. Porter, F.R.S., E. H. Rayner, Dr. R. Seligman, and Maurice Solomon.

IT is proposed to establish a permanent memorial to the late Sir William White, K.C.B., F.R.S. The Institution of Civil Engineers, Institution of Mechanical Engineers, Institution of Naval Architects, Iron and Steel Institute, Royal Society of Arts, Institution of Engineers and Shipbuilders in Scotland, North-East Coast Institution of Engineers and Shipbuilders, Institute of Marine Engineers, and Institute of Metals, are supporting the scheme, and have invited their members to contribute. A general committee (under the chairmanship of Lord Brassey) has been formed representing the engineering profession, the Navy and Merchant Service, and some Government Departments. The form which the memorial is to take will depend upon the support which is given to the scheme. It is requested that all cheques be crossed "Coutts and Co.," and made payable to "The Sir William White Memorial Fund," and sent to Dr. J. H. T. Tudsbery (hon. treasurer), Institution of Civil Engineers, Great George Street, Westminster, S.W. The general committee is thoroughly representative, and includes the president of the Royal Society, and other well-known men of science. The fund already amounts to 1368*l.*

DR. R. T. GLAZEBROOK, director of the National Physical Laboratory, asks us to supplement the article on the British radium standard contributed to our columns last week by Prof. Rutherford, with a reference to the directions which have been issued for sending radium to the laboratory. In the case of radium it is necessary to be particularly careful as to its transmission. It is stated, therefore, in the circular describing the work undertaken by the laboratory, that anyone wishing to send radium for test must advise the laboratory of his intention at least one day previous to sending the specimen. The letter of advice should state approximately the value of the specimen and the method by which it is being sent. All communications and specimens should be addressed to the Director, the National Physical Laboratory, Teddington, Middlesex, and all packages containing specimens should be marked clearly, "R. Department." The laboratory takes no responsibility for the sample until it has actually arrived and a formal receipt acknowledging its arrival has been transmitted to the sender. Samples will be returned ordinarily by registered post, the sender being charged postage and registration fee.

IT has already been fully recognised that Capt. Scott's second Antarctic Expedition was better served in the department of photography than any of its predecessors. The public should therefore welcome the opportunity of inspecting some 150 enlargements of Mr. H. G. Ponting's exquisite photographs—and not the public alone, but those interested in zoology and the study of ice also. These photographs are on exhibition in the gallery of the Fine Art Society, 148 New Bond Street. Some of the ice photographs are of extraordinary beauty and interest, such as the illustration of pressure ridges (No. 81) and that of the cliffs of the Barne Glacier (No. 109). The studies of seals and penguins are wonderful, and must represent the result of infinite patience in securing them. Many of the photographs are known from lectures and the book of the expedition, but in their present form they allow of closer inspection and fuller appreciation. It need scarcely be said that the familiar figures of members of the expedition frequently appear, and add to the interest of the collection.

NEWS is to hand, through the Rome correspondent of *The Times*, of the successful initiation of the gravimetric, magnetic, meteorological, and aërological work of the Italian Expedition to the western Himalaya and Karakoram, under Dr. F. de Filippi. Preliminary observations were made and work done at the Royal Hydrographical Institute in Genoa, and, on arrival in India, at Simla and at Dehra Dun, the headquarters of the Indian Survey. The expedition has a wireless telegraphic equipment, and has already successfully made use of it for time signals, not only between Simla, Delhi, and Lahore, but also between Skardu, in Baltistan, and Lahore. This indicates the utility of this method for field work, even though the receiving station be situated near high mountains, and the determinations of differences of longitude based on these signals, together with latitude observations, will enable observations to be made for the deviation of the plumb-line. When the expedition is at work in districts previously unworked, these signals, if equally successful, will be of high value. The investigation of the upper atmosphere has been begun by means of balloons and theodolite observations on them. A station has been established on the Deosai plateau at a height of 14,000 ft., where pendulum and magnetic work will be done, and solar radiation investigated. Geological excursions are also being made. The expedition will winter, carrying on such work as is possible, at Skardu.

A SUMMARY of the weather for the past autumn, issued by the Meteorological Office, shows the peculiarities of the season. The mildness of the weather was the chief peculiarity, and the quiet character of the wind and absence of gales was very striking considering that the temperature was so persistently high, due solely to the prevalence of southerly and south-westerly winds from the Atlantic. The mean temperature for the whole period of the three months —September, October, and November—was 4° in excess of the average in the east of England and in the midland counties, and it was 2° or 3° in excess of the average in all other districts of the United Kingdom. The maximum temperature was 79° in the north-east and north-west of England, and in the midland counties, and the minimum temperature was 22° in the midland counties and in the east of Scotland. The rainfall was in excess of the average in Ireland and over England, except in the north-eastern and north-western districts. The largest rainfall was 14·71 in. in the north of Scotland, and the least fall in any district was 6·58 in. in the north-east of England. The highest percentage of rain was 129 per cent. of the average in the south of Ireland, and in the south-east of England the aggregate rainfall was 119 per cent. of the average. In the east of Scotland the rain was only 78 per cent. of the average, and in the west of Scotland 80 per cent. In the midland counties the rainfall was 110 per cent. of the average, and in the east of England 106 per cent. The rainy days were in excess of the average in England and Ireland. The duration of bright sunshine was generally in fair agreement with the normal. At Greenwich the mean temperature for the autumn was 54°, which is 3° above the average. There were seventy days out of ninety-one with the temperature above the average, and frost occurred on only one day. The bright sunshine was seventy hours more than the average.

THE annual general meeting of the Royal Agricultural Society of England was held on December 10 at the Royal Agricultural Hall, Islington. From the report of the council of the society presented on this occasion we notice that the work at the Woburn Experimental Station continues to expand. This has so far been recognised that a grant of 500*l.* was made during the year from the Development Fund in aid of the experimental and research work carried on. As regards the field experiments, in addition to those on continuous wheat barley, the rotation and green-manuring experiments have been further carried on, as well as work on varieties of oats, varieties of lucerne, clover, and grass mixtures, linseed, soya bean, &c At the pot-culture station, in addition to a continuation of the work on lime and magnesia, the principal fresh research was on the action of copper, zinc, and manganese salts on the wheat plant, and of lithium salts on tomatoes. The practical demonstration of the eradication of wild onion by the growing of deep-rooting grasses and plants was clearly shown at Chelsing, Herts, the results of the system adopted being this year very marked. During the year 196 complete analyses, that is for purity and germinating capacity, and seventy-four rough analyses and comparisons of bulks with samples, were made. Eight prescriptions for mixtures for the formation of permanent pasture were drawn up, and three analyses of mixtures made. One of these mixtures, said to be a cheap one, was found to contain about 1 per cent. of seeds useful for the purpose, the remaining being weeds and the screenings of a wheat crop. The experiments which were begun at Woburn early in 1911 for the purpose of demonstrating that by means of isolation it is possible to rear healthy stock from tuberculous parents have been brought to a close. One of the experimental animals was killed in December last and the others in the course of the present year. After slaughter a searching post-mortem examination was made, but no evidence of tuberculosis was found in any case. A full account of the experiments will be published later.

PHYSICAL anthropologists are unwearied in their search for anatomical characteristics which may serve as tests of race. The last essay of this kind is that of Mme. Bertha de Vriese, under the title of "La signification morphologique de la rotule basée sur des recherches anthropologiques," published in *Bulletins et Mémoires de la Société d'Anthropolgie de Paris* (6th series, parts 3–4), in which the writer has collected numerous measurements of the patella among various races. The article commends itself as an important contribution to comparative anatomy.

IN the November issue of *Man* Mr. J. W. Scott Macfie describes a collection of curiously carved wooden staves from West Africa. They are used in the cult of Shongo, god of thunder and lightning. Childless women pray to Shongo for offspring, and when a son is born he is dedicated to the god. He is taken to the shrine, a ram is sacrificed, and the boy is given a staff, with directions to keep silent for a period which may extend to three months. Adults also carry these staves, and make a vow of silence for recovery of health. In the course of this rite, the patient pours the blood of a sacrificed ram on some stone celts, believed to be thunderbolts sent by Shongo. A smaller variety of staff is kept in houses to represent Shongo. Sacrifices are made before them, and thus they are regarded as Ju-ju, or sacred, and the owners are very unwilling to part with them

PALÆOLITHIC natural history forms the title of an interesting article by Mr. R. I. Pocock in *The Field* of November 29. It is illustrated by reproductions of prehistoric sketches of various animals, together with photographs of their nearest existing representatives.

To Mr. A. E. Cameron, the author, we are indebted for a copy of a paper, published in the September issue of the Transactions of the Entomological Society, on the life-history of *Lonchoea chorea,* a fly which, in the larval stage, does a certain amount of damage to diseased beet crops.

MR. W. JUNK, the well-known Berlin publisher, announces the issue of a reprint of H. Loew's "Die Europaeischen Bohr-Fliegen (Trypetidæ)," at a subscription price of 6*l.*, to be raised after publication to 7*l.* 10*s.* Although this fine folio was originally published so long ago as 1862, it is still the basis of our knowledge of this family of Diptera. The reproduction of the photographs will, it is stated, be superior to that in the original edition, in which the prints have become faded and stained. In another circular the same firm directs attention to the "Coleopterorum Catalogues," of which fifty-five parts have been already issued.

THE very remarkable vertebrate fauna of the Permo-Carboniferous beds of north-central New Mexico forms the subject of a fully illustrated memoir by Messrs. Case, Williston, and Mehl, issued, as Publication No. 181, by the Carnegie Institution of Washington. The species from this horizon at present identified include a shark akin to Pleuracanthus, five amphibians, and ten reptiles of a low, although in some cases specialised, type. The most remarkable of the amphibian remains is a skull described as a new genus and species under the name of *Chenoprosopus milleri,* the generic designation referring to the curious superficial resemblance of the specimen to the skull of a goose. The genus is believed to belong to the temnospondylous amphibians, in spite of certain indications of affinity with reptiles. Among undoubted reptiles special interest attaches to the restoration of the skeleton of the pelycosaurian described by O. C. Marsh as *Ophiacodon mirus,* on account of the enormous size of the skull as compared with that of the trunk. According to the figures, the shoulder and pectoral girdles of this and certain allied forms present a striking resemblance to the corresponding elements of African anomodonts.

IN the course of a lecture on zoological gardens delivered before the Royal Society of Arts on November 27, Dr. Chalmers Mitchell, secretary of the Zoological Society directed attention to the tastes of the general public in regard to establishments of this nature, pointing out that much greater interest is taken in watching the gambols and other habits of well-known animals than in observing rare species, or in contrasting one species with another. This, of course, is only natural, and as the members of the public supply the greater part of the funds by which menageries are maintained, it is only right and proper that their tastes should be consulted and catered for. Not that the lecturer was by any means unmindful of the scientific value of menageries. On the contrary, he pointed out that such establishments afford practically the only means of obtaining a knowledge of the comparative psychology of animals—a subject of which we are still profoundly ignorant. "I have no doubt," he observed, "if we made use of the opportunities that menageries can afford, that we should find groups differing in structure equally different in natural disposition, in mental and emotional quality, in the power of forming new habits, in the quality of their intelligence." Attention was also directed to the improvement in the condition of menagerie animals, and their increased longevity, as the result of the open-air treatment, as contrasted with the old "cossetting" system; while a considerable portion of the discourse was devoted to a description of the new "Mappin Terraces," and the "Caird Insect House," and the advantages which will accrue to the menagerie as a popular resort when the former are in full working order.

THE first number of *The Indian Journal of Medical Research,* published in July of this year, consists of more than 200 pages, with fourteen plates, and contains a number of important contributions. First in order is a memoir by Capt. W. S. Patton and Capt. F. W. Craig on certain hæmatophagous flies of the genus Musca. These are congeners of our common English house-fly, and, like it, have the proboscis soft and not adapted for piercing. Being unable, therefore, to puncture the skin of man or animals, they obtain the food they require, namely blood, by associating themselves with common biting flies, such as Stomoxys, Tabanidæ, &c. When one of these biting flies has put its proboscis through the skin the Musca approaches it, and will endeavour to thrust its proboscis into the wound, and to oust the first occupant. Sometimes several crowd round the same biter, and when they have succeeded in dislodging it, or when it has completed its meal, they suck up the blood from the wound. It is possible that these flies may play a rôle, hitherto overlooked, in the transmission of disease. Four species, two of them new, are described in detail with the help of excellent figures drawn by Mrs. Patton.

MAJOR H. G. J. DE LOTBINIÈRE has contributed to *The Quarterly Review* for October (No. 437) a concise and valuable paper on the principal forest resources of the world and the steps which have been taken in Britain and elsewhere to provide for the future. He points out that before many years the timber cut in Russia—our main source of supply, and the only important reserve left to draw upon—will exceed the annual growth, so that exports will decline; that in the majority of other timber-producing countries the forests are, or soon will be, insufficient to meet the rising demand for local consumption; and that the only forest reserves of coniferous timber as yet untouched are in regions difficult of access, in Siberia, British Columbia, and the Andes. The position so far as this country is concerned is serious, but not yet hopeless, for Britain is admirably adapted for timber-growing, though it will take years of industry to bring the soil back to forest conditions. The author makes a number of timely and practical suggestions regarding the lines on which a scheme of afforestation for suitable portions of the sixteen million acres of mountainous and heath land in Britain should be prepared, and strongly urges the necessity for immediate action.

THE Journal of the Department of Agriculture of South Australia contains, amongst many interesting articles, brief reviews of the proceedings of the agricultural bureau meetings. The bureau, which possesses more than 150 branches, is essentially carried on to provide facilities for papers on subjects of agricultural interest being read by the farmer members, and to encourage mutual help. Without wishing to imply that the English farmer is endowed with these attributes for imparting and receiving information, as is his Australian cousin, it would appear natural that he should be prepared to attach more importance to advice obtained from a practical man than from a stranger in the form of an agricultural adviser. The adoption of farmers' bureaus in this country might be productive of much good work by stimulating the practical man to compare and to analyse variations in practice and profitability and to arouse greater interest in the daily routine.

AN interesting article by Mr. A. O. Walker, on weather fallacies, is contained in *Symons's Meteorological Magazine* for October and November, from experience gained as an observer for more than forty years. The first subject of attack is the Meteorological Office weather forecasts, but the criticisms do not imply any censure of the staff of that office, but are written from an agricultural point of view. Selecting two or three of the author's remarks: during hay harvest, *e.g.* a farmer wants to know what the weather will be two or three days *after the hay is cut*. Thunderstorms will occur independently of calculations as to exact time and place, and neighbouring stations are differently affected. Monthly averages of rainfall are often misleading; at Ulcombe (near Maidstone) for the years 1900–9 February had the lowest average, 1·62 in., and October the highest, 3·10 in. But in 1900 the two months changed places: October 1·76 in., and February 3·75 in., the wettest month of the year. Monthly mean temperatures are also apt to mislead, as they give little idea of the intensity of cold or warm spells. It is a common belief that temperature falls as height increases, within such limits as, for example, are found in south England; it is generally true as regards day temperature, but not as to night temperature. This is shown by the greater immunity of tender shrubs half-way up a hill from injury by frost compared with those at the foot. Snow is believed by some to have a special fertilising effect, but all that can be said of it is that in times of severe frost it protects the roots of plants.

THE *Journal de Physique* for October contains a paper by M. R. Détrait describing his researches on the slipping of liquids at the surfaces of solids. The accuracy with which the flow of a liquid through a capillary tube can be represented by the fourth power of the radius is a sufficient guarantee that at the velocities usual in such tubes the slip, if it exists at all, is small. To put the question to a severe test, M. Détrait has compared the times of flow of equal volumes of water and petrol through tubes of glass, which both liquids wet, and through tubes of sulphur, which the petrol alone wets. The experiments show that there is a measurable slip of a liquid past a solid it does not wet, which in the case of water flowing in a sulphur capillary tube leads to an excess flow equivalent to an increase of radius of the tube by about one-thousandth of a millimetre.

THE nature of the gases liberated by the autolysis of different organs and tissues forms the subject of a paper by Mr. F. Traetta Mosca in the *Gazzetta Chimica Italiana* (vol. xliii., ii., 144). Striking differences are shown by the different tissues, pointing to wide differences of enzymic activity; the liver, kidneys, brain, and suprarenal capsules liberate mixtures of carbon dioxide, nitrogen, and hydrogen in different proportions, whilst the intestines give in addition carbon monoxide and oxygen; from the pancreas, spleen, lung, and heart it is remarkable that nitrogen alone is evolved. In the majority of other cases also the relatively high proportion of nitrogen and hydrogen is a striking phenomenon of the protein degradation; thus in the case of autolysing calves' brain, 71·6 per cent. of the gas evolved consists of nitrogen and 22·4 per cent. of hydrogen, whilst from the suprarenal capsules 40 per cent. of the gas is nitrogen and 50·4 per cent. hydrogen.

THE Department of Mines of New South Wales has issued a pamphlet on mercury or quicksilver in New South Wales, with notes on its occurrence in other colonies and countries (Mineral Resources, No. 7), by J. E. Carne. The occurrence of mercury, in the native state or in the form of cinnabar, has been indicated in some ten localities, but the quantities produced hitherto are very small, one of the most favourable localities having yielded only about 10 cwt. of metal to the company which attempted for a time to exploit it. The general reader will, however, find that much interesting information has been brought together in the present report with reference to the production of mercury in other countries. An account is given of the wonderful mines at Almaden, in Spain, which are known to have yielded some four million flasks, or 140,000 tons of metal, whilst the Californian mines have given about half this quantity. It is pointed out that wet-concentration has proved useless, in spite of the high density of the mineral, and that efficient working of the ordinary low-grade ores (yielding 0·5 to 2 per cent. of mercury) is only to be effected by careful attention to economical working of the furnaces; the gases must escape at the lowest temperature which will retain the mercury as vapour, and the hot spent ore must be used to heat the air-supply of the furnaces. As illustrating the difficulty of retaining the metal, it is mentioned that at the New Almaden mine in California, 2000 flasks (135,000 lb.) of mercury were taken from the ground under one of the furnaces, the metal having penetrated 27 ft. to bedrock.

The Engineer for December 5 contains an account of the motor ship *Arum*, launched last week from the yard of the builders, Messrs. Swan, Hunter and Wigham Richardsons, Ltd. This vessel is an addition to the comparatively small number of motor ships of which both hull and engines have been built in this country. Her dimensions are 360 ft. length over all, by 47 ft. beam, by 27 ft. moulded depth; she is to carry about 5600 tons dead weight on a draught of 21 ft. 6 in. The main engines, built by the same firm, consist of a pair of four-cylinder two-cycle reversible Diesel engines, designed for 1150 brake-horse-power at 135 revolutions per minute; the speed will be about 10·5 knots. The vessel has been built to the order of Sir Marcus Samuel for the carrying of general cargo, and is to trade to the Persian Gulf. Oil from the Persian oil wells is to be employed, a favourable ten years' contract having been secured for the supply of Sir Marcus Samuel's fleet.

An illustrated article in *Engineering* for December 5 on the channel steamer *Paris* gives some up-to-date information regarding the development of geared turbines. Absence of wear, freedom from noise, durability, and low frictional loss have been achieved. The loss due to transmission and reduction with double helical wheels is under 2 per cent., whereas in the hydraulic and electrical systems it is quite five times as great. It has been contended that the windage loss in the running idle of the astern turbines partly nullifies this advantage; as the astern turbines revolve in the vacuum of the condenser, the losses for them amount to only 0·5 per cent. Accounting also for the loss due to the thrust-block associated with geared turbines, the mechanical gearing gives an efficiency of about 97 per cent. as compared with about 90 per cent. in other systems. In the *Paris*, the power transmitted through two gear-wheels is 14,000 shaft-horse-power. It is but four years since the first use of such gearing, and to-day there are 435,450 horse-power completed or under construction.

The 1913 issue of "The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland" has been published by Messrs. Charles Griffin and Co., Ltd., at the price of 7*s*. 6*d*. It will be remembered this useful annual publication is compiled from official sources, and it is appropriately described on the title-page as a record of the work done in science, literature, and art during the session 1912–13 by numerous societies and Government institutions. We notice in the case of the British Association that though particulars are given of the meeting held at Dundee in September, 1912, no information about the Birmingham meeting of September last is included.

OUR ASTRONOMICAL COLUMN.

The Structure of the Universe.—The November issue of *Scientia* contains an article by Prof. J. C. Kapteyn, entitled "On the Structure of the Universe," which should be read by all those who wish to obtain the most modern view of this most fascinating problem. It was Prof. Kapteyn who, in 1904, first determined the elements of the two star streams, and since then a great advance has been made in extending our knowledge in this direction. In the present article, and, it may be added, it is written in a very clear and concise manner, he places before the reader the general nature of the problem, and step by step he points out how the various researches of many observers are coordinated and brought to bear in concentrated form on the question of the structure of the universe. The subject being so vast, he confines himself here mainly to that portion concerned with star-streaming, and considers the questions, What has the discovery of star-streaming done, and, What does it promise to do for the solution of the problems (1) that of the distance, and (2) that of the history or evolution of the stellar system. Prof. Kapteyn utilises a modified form of Secchi's stellar classification, and states that there is much evidence to show that this classification is a natural one, and that the order of evolution is as follows:—The helium stars being those of recent birth, while we come to older and older stars in passing from the helium stars to the stars of the first, then to those of the second, and finally to those of the third type.

In speaking of the spectra of such groups of stars as the Hyades, Pleiades, Ursa Major group, &c., he says:—"The groups that do not now contain any helium stars must have contained them formerly in great numbers. Going back in time still further, these helium stars must have been generated from some other matter, probably nebulous matter. Therefore in a remote past the groups of the Hyades and Ursa Major must have been full of nebula. So far as I know there is no trace of nebulosity now. So there must have been an epoch in the past that nebulous matter was exhausted, had probably all gone to the formation of stars."

Journal of the Royal Astronomical Society of Canada.—In the September to October number of the Journal of the R.A.S. of Canada, Mr. H. B. Collier writes on meteorites, and after giving a brief summary of early falls, he refers in greater detail to the "Cape York" meteorites brought by Peary from Greenland, and to the "Williamette" meteorite found nineteen miles south of Portland, Oregon. A very excellent translation from *Ciel et Terre* of a most interesting article by G. van Biesbroeck on the astronomical works of Olaus Roemer, the discoverer of the velocity of the transmission of light, is printed. The fire at Copenhagen in 1728 destroyed most of Roemer's manuscripts, but a portfolio bearing the inscription "*Adversaria*," survived, and has recently been published by the Danish Society of Sciences. Valuable historical facts were contained in it, and are here described. The subject of the boundary survey between Canada and the United States east of the St. Lawrence is dealt with by Mr. T. Fawcett, and he describes the part Airy took in the arrangements for the carrying out of the necessary astronomical work which such a survey demanded. A description is also given of the methods employed on that occasion (1842) by the British and American parties.

New Nebulæ and Variable Stars.—In No. 4697 of the *Astronomische Nachrichten*, Mr. C. R. D'Esterre describes an object the abnormal behaviour